

What is claimed is:

- 1           1.       A data protection apparatus for protecting data in a  
2       storage volume in a computer system, with said computer system  
3       comprising said storage volume assigned for storing data, a  
4       computer for reading and writing data from and to said storage  
5       volume, and a storage control unit for controlling communication  
6       between said computer and said storage volume, wherein said data  
7       protection apparatus comprises:  
8           an event detection unit for detecting an event occurrence;  
9       and  
10          a path disconnection unit for instructing said storage control  
11       unit to stop communication between said computer and said storage  
12       volume, when said event detection unit detects an event.
- 1           2.       A data protection apparatus according to Claim 1,  
2       wherein:  
3           said computer system further comprises an illegal intrusion  
4       detection unit for detecting an illegal intrusion against said  
5       computer;  
6           said event detection unit receives a detection of the illegal  
7       intrusion from said illegal intrusion detection unit; and  
8           when said event detection unit receives the detection of the  
9       illegal intrusion, said path disconnection unit instructs said storage  
10      control unit to stop communication between said computer and said  
11      storage volume.

1           3.       A data protection apparatus according to Claim 1,  
2   wherein:  
3           said computer system further comprises a computer virus  
4   detection unit for detecting a computer virus in said storage volume;  
5           said event detection unit receives a detection of the  
6   computer virus from said computer virus detection unit; and  
7           when said event detection unit receives the detection of the  
8   computer virus, said path disconnection unit instructs said storage  
9   control unit to stop communication between said computer and said  
10   storage volume.

1           4.       A data protection method for protecting data in a  
2   storage volume in a computer system, with said computer system  
3   comprising said storage volume assigned for storing data, a  
4   computer for reading and writing data from and to said storage  
5   volume and a storage control unit for controlling communication  
6   between said computer and said storage volume, wherein said data  
7   protection method comprises steps of:  
8           detecting an event occurrence; and  
9           instructing said storage control unit to stop communication  
10   between said computer and said storage volume, when said event is  
11   detected.

1           5.       A program for making an information processing  
2   apparatus perform data protection of a storage volume in a  
3   computer system, with said computer system comprising said  
4   storage volume assigned for storing data, a computer for reading  
5   and writing data from and to said storage volume, and a storage

6 control unit for controlling communication between said computer  
7 and said storage volume, wherein said program makes said  
8 information processing apparatus perform processes of:  
9 detecting an event occurrence; and  
10 instructing said storage control unit to stop communication  
11 between said computer and said storage volume, after said event is  
12 detected.

1 6. A computer system comprising a storage volume  
2 assigned for storing data, a computer for reading and writing data  
3 from and to said storage volume, a storage control unit for  
4 controlling communication between said computer and said storage  
5 volume, and a data protection apparatus for protecting data in said  
6 storage volume, wherein:  
7 said data protection apparatus comprises:  
8 an event detection unit for detecting an event occurrence;  
9 and  
10 a path disconnection unit for instructing said storage control  
11 unit to stop communication between said computer and said storage  
12 volume, when said event detection unit detects an event.

1 7. A data protection apparatus for protecting data in a  
2 storage volume in a computer system, with said computer system  
3 comprising said storage volume assigned for storing data, a  
4 replicated volume assigned for storing data duplicated from said  
5 storage volume, and a storage control unit for controlling data  
6 transfer from said storage volume to said replicated volume,  
7 wherein said data protection apparatus comprises:

8           an event detection unit for detecting an event occurrence;  
9    and  
10          a replication stopping unit for instructing said storage  
11    control unit to stop data transfer from said storage volume to said  
12    replicated volume, when said event detection unit detects an event.

1           8.       A data protection apparatus according to Claim 7,  
2    wherein:  
3          said computer system further comprises a computer for  
4    reading and writing data from and to said storage volume an illegal  
5    intrusion detection unit for detecting an illegal intrusion into said  
6    computer;  
7          said event detection unit receives a detection of the illegal  
8    intrusion from said illegal intrusion detection unit; and  
9          when said event detection unit receives the detection of the  
10   illegal intrusion, said replication stopping unit instructs said  
11   storage control unit to stop data transfer from said storage volume  
12   to said replicated volume.

1           9.       A data protection apparatus according to Claim 7,  
2    wherein:  
3          said computer system further comprises a computer virus  
4    detection unit for detecting a computer virus in said storage;  
5          said event detection unit receives the detection of the  
6    computer virus from said computer virus detection unit; and  
7          when said event detection unit receives the detection of the  
8    computer virus, said replication stopping unit instructs said storage  
9    control unit to stop data transfer from said storage volume to said

10 replicated volume.

1           10.     A data protection method for protecting data in a  
2 storage volume in a computer system, with said computer system  
3 comprising said storage volume assigned for storing data, a  
4 replicated volume assigned for storing data duplicated from said  
5 storage volume, and a storage control unit for controlling data  
6 transfer from said storage volume to said replicated volume,  
7 wherein said data protection method comprises steps of:  
8           detecting an event occurrence; and  
9           instructing said storage control unit to stop data transfer  
10 from said storage volume to said replicated volume, when said event  
11 is detected.

1           11.     A program for making an information processing  
2 apparatus perform data protection of a storage volume in a  
3 computer system, with said computer system comprising said  
4 storage volume assigned for storing data, a replicated volume  
5 assigned for storing data duplicated from said storage volume, and a  
6 storage control unit for controlling data transfer from said storage  
7 volume to said replicated volume, wherein said program makes said  
8 information processing apparatus perform processes of:  
9           detecting an event occurrence; and  
10           instructing said storage control unit to stop data transfer  
11 from said storage volume to said replicated volume, when said event  
12 is detected.

1           12.     A storage medium that stores the program according

2 to Claim 5 and can be read by the information processing apparatus.

1 13. A storage medium that stores the program according  
2 to Claim 11 and can be read by the information processing  
3 apparatus.

1 14. A computer system comprising a storage volume  
2 assigned for storing data, a replicated volume assigned for storing  
3 data duplicated from said storage volume, a storage control unit for  
4 controlling data transfer from said storage volume to said replicated  
5 volume, and a data protection apparatus for protecting data in said  
6 storage volume, wherein:

7 said data protection apparatus comprises:

8 an event detection unit for detecting an event occurrence;

9 and

10 a replication stopping unit for instructing said storage  
11 control unit to stop data transfer from said storage volume to said  
12 replicated volume, when said event detection unit detects an event.

1 15. A computer system according to Claim 14, wherein:

2 write data to said storage volume is transferred by said  
3 storage control unit to said replicated volume with a delay of a given  
4 time.

1 16. A computer system according to Claim 14, wherein:

2 as said replicated volume, a plurality of replicated volumes  
3 are provided; and

4 said storage control unit switches a transfer destination of

5 write data of said storage volume, at given time intervals among  
6 said plurality of replicated volumes.

1 17. A computer system according to Claim 16, wherein:  
2 data transferred to said plurality of replicated volumes is  
3 further transferred to another plurality of replicated volumes.

1 18. A computer system according to Claim 16, wherein:  
2 said computer system further comprises an alteration  
3 detection unit that reads given data in said plurality of replicated  
4 volumes to detect respective differences between the given data; and  
5 the event detected by said event detection unit is a detection  
6 result of the differences between the given data, with said detection  
7 result being received from said alteration detection unit.

1 19. A computer system according to Claim 18, wherein:  
2 said computer system further comprises a computer for  
3 reading and writing data from and to said storage volume;  
4 said storage control unit further controls communication  
5 between said computer and said storage volume; and  
6 said data protection apparatus instructs said storage  
7 controller to stop communication between said computer and said  
8 storage when said event detection unit detects said event.

1 20. A computer system comprising:  
2 a storage apparatus comprising a storage volume assigned  
3 for storing data, a replicated volume assigned for storing data  
4 duplicated from said storage volume, a host computer for reading

5 and writing data from and to said storage volume, a storage control  
6 unit for controlling communication between said host computer and  
7 said storage volume, and a data protection apparatus for protecting  
8 data in said storage volume, wherein:

9

10           said host computer detects an illegal intrusion and sends a  
11 notification of the detected illegal intrusion to said data protection  
12 apparatus;

13           said data protection apparatus receives said notification and  
14 gives said storage control unit an instruction to stop communication  
15 between said computer and said storage volume; and

16           said storage control unit, receiving said instruction, rejects  
17 access from outside to the storage volume of said storage apparatus.